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The Soviet Economy in 1973: Performance, Plans, and Implications

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THE SOVIET ECONOMY IN 1973: PERFORMANCE, PLANS, AND IMPLICATIONS

INTRODUCTION

As the USSR moves into the mid-1970s, the economy continues in a state of flux. While the leadership feels compelled to keep the economy moving ahead, the traditional approach of achieving growth through massive investment has become too expensive. The leadership now appears firmly committed to improving consumer welfare, a policy which cannot be satisfied by devoting larger and larger shares of national output to investment.

Thus, Soviet leaders are shifting to a more balanced approach to economic growth. Consumption has been placed on a more equal footing with investment among competing uses for output, and a larger share of investment resources is being devoted to consumer-related sectors such as agriculture. The more balanced approach to economic growth has been prompted by several interdependent problem areas, all of long standing:

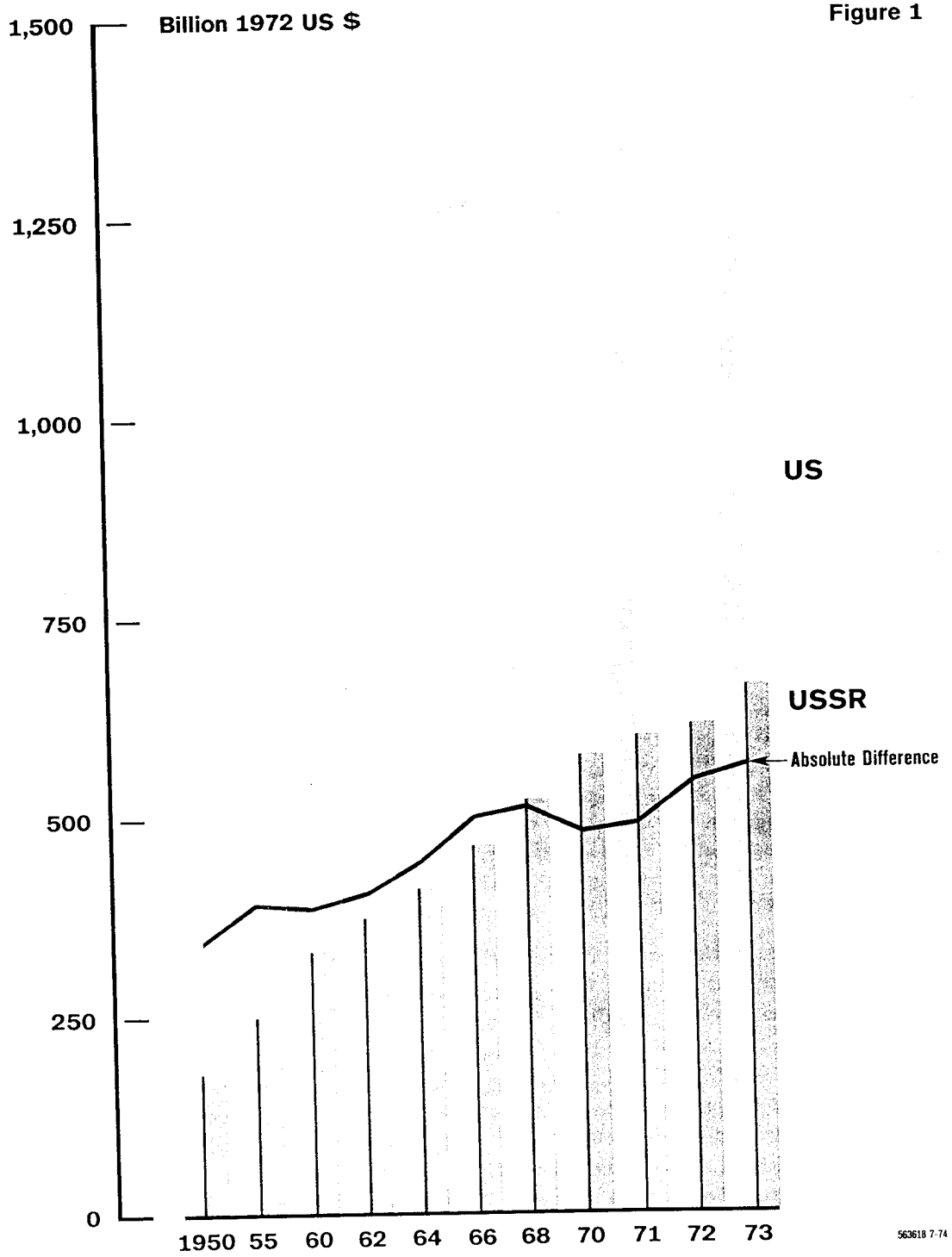
- *Declining growth rates.* The economy grew more slowly in the 1960s than in the 1950s; consequently, the goal of overtaking the United States economically is as distant as it was a decade ago—the dollar gap between the national products of the two countries increased in the 1960s (see Figure 1). In terms of per capita production, the USSR also trails many West European countries and Japan.

- *Agricultural backwardness.* Agriculture, the least productive sector, continues to be a major drag on the economy. The system of giant collective and state farms has proved to be the worst managed and least efficient organizational form in the country. More than one-fourth of the labor force is still employed on the farm, and the cost of producing grain and meat is extremely high. Large increases in farm prices and peasant incomes over the last decade have slowed the flight of labor from the farm but have also raised costs because efficiency has not increased apace.

- *The productivity and technological gap.* The fact that the USSR produces about half as much as the United States with a labor force 40% greater suggests the magnitude of the Soviet problem in this area. The reasons for the relatively low productivity in the Soviet Union are partly organizational and political: inefficient management practices, a cumbersome planning system, and the overriding priority given to increasing the quantity of production as quickly as possible to the detriment of efficiency and quality. Introduction of new technology and the replacement of old methods of production have been slow, and as a consequence, the technological level in many sectors is substantially below Western levels. Product quality also is a serious problem. Most Soviet manufactured goods, particularly machinery, cannot compete successfully in Western markets.

US-USSR: GNP

Figure 1



● *Living standards.* Although much of the Soviet population has experienced a substantial rise in living standards since the late 1940s, per capita consumption in the USSR is still only one-third that in the United States, substantially less than in Western Europe, and less than in most East European countries. Soviet consumers are increasingly aware of where they stand in relation to consumers in other countries, and, while they want to catch up in all areas, they are particularly interested in improving the quality of their diet and in acquiring more housing. The leadership has committed itself to major programs in the consumption area. The most striking evidence of the new policy is the plan to make more meat and consumer durables, particularly passenger cars, available to the people. Efforts to implement this program have been particularly visible in the recent performance of the economy.

This report assesses Soviet economic performance in 1973 in the light of these current policy trends, examines Soviet economic plans and prospects for 1974, and discusses the implications of performance and plans for Soviet relations with the West.

THE ECONOMIC PERFORMANCE IN 1973

The Soviet economy recovered sharply in 1973 from its exceptionally poor performance the previous year. According to preliminary estimates, gross national product (GNP) increased by 7.5% following a 1.7% rise in 1972.[1] Although most of the upsurge in GNP was due to the record performance in farm production, industrial growth also increased (see Table 1).

Table 1

USSR: Growth of GNP by Sector of Origin [1]

Percent

	Average Annual 1966–70	1971	1972	Preliminary 1973
Gross national product	5.5	4.2	1.7	7.5
By producing sector				
Agriculture	4.1	−0.6	−9.3	16.8
Industry	6.8	6.5	5.6	6.2
Construction	7.0	8.7	6.0	2.2
Transportation and communications	6.2	6.5	5.1	7.3
Domestic trade	8.2	6.8	6.9	5.4
Services	4.4	3.7	3.7	3.7

[1] Calculated at factor cost.

After the relatively poor showing in 1971 and 1972, the economic recovery last year gave a boost to consumer programs and bought the leadership some time to pursue actions aimed at increasing productivity. Soviet consumers benefited from substantial increases in food supplies in 1973, and production of soft goods also made a comeback. The success in agriculture in 1973 also ensured more raw materials for the processed foods industry and reduced import requirements for grain in 1974. Meanwhile, the USSR's ability to import technology and equipment was strengthened by increases in the world prices of many of its raw material exports.

[1] A summary of economic indicators is shown in Appendix A, Table A1.

But in a longer term perspective, Soviet economic performance continued to lag behind both the aspirations of Soviet leaders and the performance of some Western countries. The 1972 slump delivered a severe blow to the chances of fulfilling the Ninth Five-Year Plan (1971-75), and last year's turnaround made up only part of the difference. The chronic problems of low productivity, slow assimilation of new technology, and delayed completion of new facilities persisted in 1973, and shortfalls in meeting production plans were still common. And, despite some gains last year, the Soviet consumer still complains of the inferior quality, assortment, and styling of clothes and durables.

AGRICULTURE

Exceptionally good weather during the 1973 growing season, together with a campaign-driven increase of 2% in the total sown area, resulted in the largest annual rise in farm output in almost 10 years. A bumper grain harvest, and record harvests of other major crops, raised total crop output by nearly 28%, following reductions of 1% in 1971 and 11% in 1972 (see Figure 2). Livestock

USSR: Percentage Change of Agricultural Output

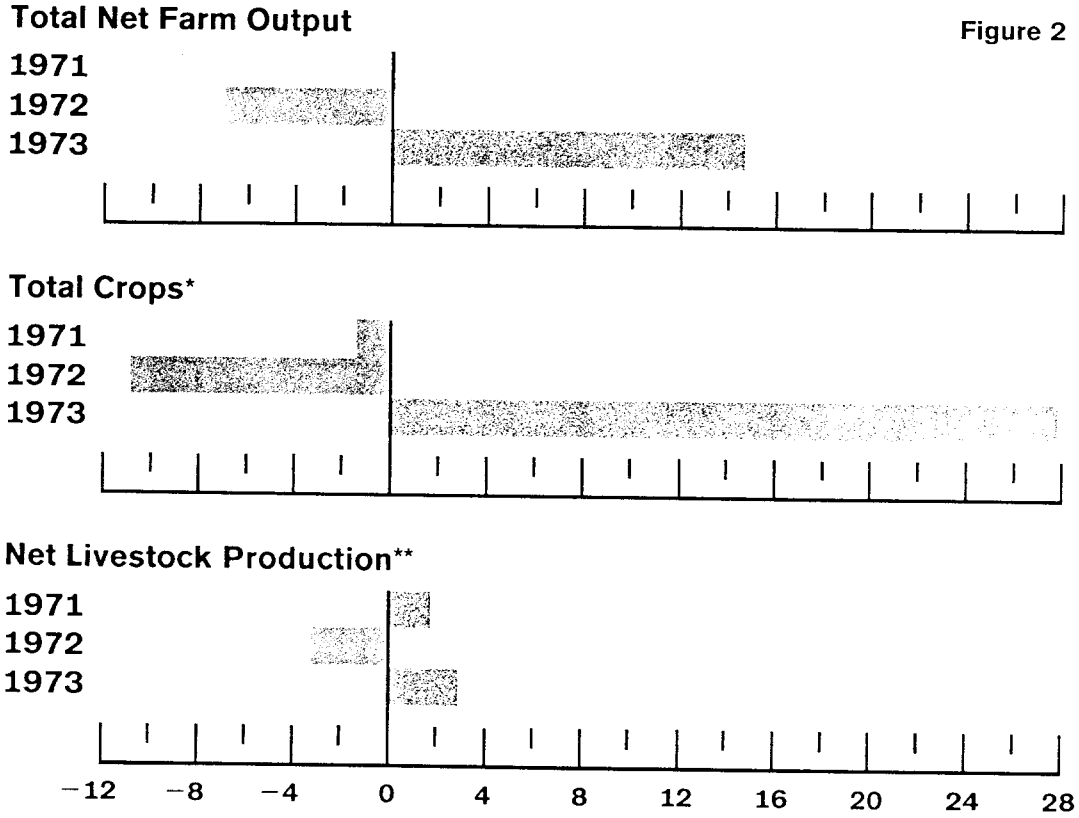


Figure 2

*Less grain and potatoes used for seed.

**Gross livestock production less grain, potatoes, vegetables, and milk fed to livestock and hatching eggs.

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production also rose in 1973, reflecting large gains in the output of dairy products and some increase in livestock herds.

But the grain crop contained an abnormally high percentage of water and trash. High winds and rains in late July and a severe storm in mid-August flattened grain and hampered harvesting operations in many parts of the western USSR. In some instances, farmers had to resort to hand harvesting, and combines fitted with caterpillar-type tracks were used to navigate the water-soaked fields. The official estimate of the grain harvest, which includes waste, was 222.5 million metric tons. We estimate the crop of usable grain at 170 million tons (see Table 2)—26% more than in 1972. Since supplies of fodder [2] increased substantially at the same time, the livestock sector found itself with greatly augmented feed stocks at the end of 1973.

Table 2

USSR: Production of Selected Crops and Livestock Products

	Annual Average 1966–70	1971	1972	Preliminary 1973
	Million Metric Tons			
Crops				
Grain [1]	134.9	148.0	134.5	170.0
Potatoes	94.8	92.7	78.3	107.7
Vegetables	19.5	20.8	19.9	24.5
Sugar beets	81.1	72.2	76.4	86.8
Sunflower seeds [1]	5.9	5.2	4.6	6.8
Cotton	6.1	7.1	7.3	7.7
	Thousand Metric Tons			
Livestock products				
Meat (slaughter weight)	11,583	13,272	13,633	13,475
Milk	80,553	83,183	83,181	87,234
Wool	398	429	420	428
	Billion Units			
Eggs	35.8	45.1	47.9	50.8

[1] Estimated usable production. Soviet official statistics have been discounted by 17% to 24% for moisture and waste in grain and by 8% in sunflower seeds.

The harvests of other major crops also reached new highs in 1973. The 38% rise in potato output meant that more was available for the consumer, for seed, and for livestock feed—especially in the private sector. Sugar beet production was the highest since 1968. The domestic crop—which will yield about 9 million tons of refined sugar—plus expected imports of sugar from Cuba should exceed domestic requirements by nearly 1 million tons, permitting resumption of normal exports as well as stock replenishment. Production of sunflower seeds, which provides about three-fourths of Soviet vegetable oil, was up almost 48% in 1973; this will allow the USSR to boost exports of sunflower oil in 1974. In addition, a record cotton crop and an increase in soybean production will further augment vegetable oil supplies.[3]

[2] Including roughages such as hay, silage, pasture, and straw, which usually provide about three-fifths of the total feed supply. Concentrated feeds (feed grains, milling by-products, and oil seed meals) supply another third, and the balance comes from roots, tubers, milk, and miscellaneous feeds.

[3] Cottonseed oil provides about 20% of domestic vegetable oil in the USSR and soybean oil about 4%.

The leadership was determined to save the country's livestock after the 1972 drought and it succeeded (see Table 3). State procurements dropped in early 1973, reducing meat supplies to the population. But the key decisions had already been made in mid-1972. By buying 28 million tons of grain between May and October 1972, the Politburo provided the support necessary to maintain and even increase livestock inventories while at the same time ensuring adequate supplies to cover both domestic food requirements and commitments to client states. More than half of the record grain imports in fiscal year (FY) 1973 consisted of wheat (18 million tons), apparently to replace the low-quality domestic wheat fed to livestock.

To the leadership, the good news from the farm sector must have seemed a partial vindication of the large and growing investments that the Brezhnev programs have allocated to agriculture. Since assuming power in 1965, the Brezhnev regime has committed itself increasingly to a policy of raising consumer welfare, especially through improvements in the Soviet diet. The extent to which these commitments could be met has depended on the regime's ability to stimulate farm production. While considerable progress was made in increasing farm output during 1966-70, the lack of progress in 1971, followed by a decline in 1972, brought agricultural production back to about the level of 1968.

A major part of the decline was caused by less favorable growing conditions; the very favorable weather conditions of 1968 and 1970 were replaced by normal (1971) or worse-than-normal conditions (1972).

Even before the production shortfall of 1972, however, it had become apparent that the rate of progress achieved by the farm sector was not keeping up with the demands stemming from new consumer programs. Although agricultural production in 1971 remained at the record level achieved in 1970, the USSR imported a record-high volume of farm products in FY 1972 to maintain the forward momentum in its program to upgrade the quality of the Soviet diet.

The Brezhnev farm policies have included large injections of industrial products and massive land reclamation programs. Certainly, these contributed to the record performance in 1973. Since 1970, deliveries of mineral fertilizer have increased annually by an average of about 10%, and deliveries of farm machinery (including tractors and trucks) by 11%. Total investment in agriculture last year rose by 8%, bringing the total for 1971-73 to slightly more than 3% above the goal for the 3-year period. These funds have paid for (1) the addition of almost 5 million hectares of newly irrigated and drained land; (2) construction of grain elevators, vegetable storage facilities, livestock raising and poultry farms, and repair bases; and (3) acquisitions of equipment and machinery.

Nevertheless, in terms of the technology employed in agriculture, the USSR still lags far behind the United States. Productivity of labor is much higher in the United States, partly because the US farmer uses mineral fertilizers much

Table 3
USSR: Livestock Inventories

Million Head on 1 January

	1971	1972	1973	1974
Cattle	99.2	102.4	104.0	106.2
Cows	41.0	41.2	41.7	42.3
Other	58.2	61.2	62.3	63.9
Hogs	67.5	71.4	66.6	69.9
Sheep and goats	143.4	145.3	144.7	148.4

more intensively, and the ratio of farm equipment to cultivated acreage is far higher in the United States. Despite the greater labor intensity of Soviet farming, the US advantage in terms of a higher proportion of land with fertile soil and adequate moisture—taken together with an advantage in fertilizer application, varietal development, livestock breeding, and organization—has resulted in a marked difference in crop and livestock yields. In sum, while US agriculture is capital intensive, Soviet agriculture remains highly labor intensive.[4]

INDUSTRY

Industrial output grew by an estimated 6.2% in 1973—a modest recovery from what in Soviet terms was a slump in 1972 (see Table 4). Several factors contributed to the recovery of industrial production last year.

- First, hours worked increased substantially, mainly because of fewer holidays in 1973 and relief from the previous year's above-normal demand for industrial workers to support agriculture. During the 1972 planting and harvest periods, thousands more industrial workers than usual were pulled off their jobs and detailed to support farm operations.

- Second, the industrial supply system recovered somewhat from the disruptions caused by the massive roundup of trucks and railroad cars in 1972—again to support the harvest. After drought devastated the 1972 grain crop in the western USSR, nearly every available vehicle was pressed into service to salvage the grain being harvested in the east.

- Finally, industrial output benefited from the combined effects of a large carryover of new capacity commissioned late in 1972 and more selective allocations of capital investment in 1973. New construction starts were severely restricted last year in favor of concentrating resources on important projects nearing completion.

Table 4

USSR: Growth of Industrial Production, Inputs, and Factor Productivity

Percent

	Average Annual 1966–70	1971	1972	Preliminary 1973
Industrial production	6.8	6.5	5.6	6.2
Inputs				
Man-hours and capital	5.4	4.9	3.8	4.7
Man-hours	3.1	2.0	0.8	1.4
Employment	2.9	1.4	1.3	1.3
Capital	8.7	9.2	8.0	9.4
Factor productivity				
Man-hours and capital	1.4	1.5	1.8	1.5
Man-hours	3.6	4.4	4.8	4.7
Employment	3.8	5.0	4.2	4.8
Capital	−1.7	−2.5	−2.2	−2.9

Although output trends were relatively more favorable in 1973, industry is faced with a basic longer run problem—to spur the introduction of new technology. Indeed, the rate of growth of factor productivity in 1973 was slightly lower than in 1972. The regime hopes that by accelerating the introduction of

[4] Statistical indicators of the levels of farm technology in the United States and the Soviet Union are shown in Appendix A, Table A2.

new technology and improving the management of research and development (R&D), factor productivity can be returned to the higher growth rates attained in the 1950s. A joint decree of the Party and the Council of Ministers in March 1973 attacked this problem by ordering a reorganization of industry, to be completed by the end of 1975. The impact of merely redrawing chains of command probably will be minor. But the decree took a step in the right direction by combining some production and R&D units under unified management. Opposition to this reform, however, is wide-ranging—covering industrial ministers anxious to preserve their bureaucratic empires, enterprise managers who stand to lose their independence, and local Party and government chieftains who fear the loss of local budget revenue as well as the erosion of their powers. Progress toward the reform goals, therefore, has been slow.

Energy Production

Energy is very much on the minds of Soviet leaders. Much of the USSR's capacity to sustain economic growth depends on exploiting huge energy resources, both for domestic use and to earn hard currency. But production of energy products in 1973 did not match Soviet expectations.

Although increases in output of fuels and power in 1973 were enough to assure continued self-sufficiency, the extraction of crude oil and natural gas fell short of even the reduced goals for 1973. The 6.7% growth in production of electric power (see Table 5) was less than in either of the two previous years and below that needed to reach the 1975 production goal.

The Soviet petroleum industry was plagued by a number of serious problems in 1973 that will persist in 1974 and 1975. The lack of adequate drilling equipment has prevented rapid exploration of oil and gas fields. About half of the 35 billion to 40 billion barrels of proved and probable reserves of oil are located in permafrost areas, where exploitation is difficult and costly. The inability to accomplish deep drilling—more than 3,000 meters (9,800 feet)—is a serious bottleneck in the exploration and development of new oil and gas regions. Moreover, declining reservoir pressures and the increasing inefficiency of waterflooding operations in the older regions require the installation of larger numbers of centrifugal pumps at oil wells and the use of more compressors at gas wells to repressure gas fields and to increase pressure of gas moved through pipelines. Costs of production have risen substantially, especially in the gas industry.

Because large, older fields near consumption centers are being depleted more rapidly than expected, the USSR must accelerate development of oil and

Table 5

USSR: Growth of Energy Production

Percent

	Average Annual 1966–70	1971	1972	1973
Primary energy [1]	5.2	5.2	4.9	4.0
Coal	1.5	2.7	2.2	2.0
Crude oil	7.6	6.6	5.9	6.9
Natural gas	9.1	7.1	4.2	6.6
Electric power	7.9	8.0	7.1	6.7

[1] Based on conversion of coal, oil, gas, and hydroelectric power to units of standard fuel. Production of hydroelectric power in 1973 remained the same as in 1972.

gas deposits in West Siberia and Central Asia, far from the major consuming centers. The need to connect fields and consuming centers with large-diameter pipelines has pushed the demand for line pipe, pumps, and compressors beyond the available supply. As a result, pipeline programs are behind schedule, contributing to the shortfalls in deliveries of oil and gas.

Recently, Soviet petroleum officials have complained about the problems the world energy crisis has given them. They claim that the USSR cannot simultaneously meet its own oil requirements, fill the needs of other socialist countries, and continue to expand deliveries to established markets in capitalist countries. The USSR exports about one-fourth of total domestic oil production, about 2 million barrels per day. About one-half of these exports go to the West, especially Western Europe (see Figure 3). The USSR has little, if any, uncommitted oil from domestic sources with which to expand sales to the West and take advantage of the present prices.

Coal production reached 668 million tons in 1973, an increase of 2% over 1972 and above the 1973 goal set by the current 5-year plan. Meanwhile, industry is pushing a modernization program. An April 1973 resolution called for greater efforts in carrying out plan directives regarding design, production, and use of new types of coal mining equipment, particularly for underground mining.

The coal industry does not use Western equipment to any significant extent. Some interest has been displayed, however, in exchanges of technical information. In May 1973 a long-term economic-technical agreement was signed with the West German Ruhrkohle Company, and in January 1974 an agreement was reached with Kaiser Industries to cooperate in hydraulic coal mining technology.

Production of electric power in 1973 increased 6.7%, slower than in the previous two years. A shortage of rainfall for the past two years has resulted in a low water level in the rivers in many regions of the country, causing an underfulfillment of production at hydroelectric powerplants. About 125 billion kilowatt hours (kWh) was produced at these plants in 1973, instead of the planned 130 billion kWh. Thermal powerplants continue to have trouble in assimilating large new generating units at their full rated capacity because of design and construction defects in the equipment and because of inexperienced operating personnel. The supply of fuel to thermal powerplants in the European region of the USSR became a serious problem in the latter part of 1973, necessitating curtailed lighting of streets and public buildings in Moscow, as well as a plea to consumers to economize in the use of electric power. The Soviet Union has large deposits of fuel in Siberia, but 75% of the electric power is produced in European areas, and the Soviets are having difficulty in transporting fuel to western parts of the country in sufficient quantities.

The Soviet nuclear power program, which had lagged behind the US effort, is now beginning to get off the ground. Soviet nuclear powerplants produced 11.7 billion kWh of electricity in 1973, an increase of more than 50% over the previous year. Although still representing only 1.3% of the total electricity produced in the USSR, nuclear power's contribution will grow rapidly as a result of the construction program now under way.

During 1973, a 440-megawatt (MW) nuclear powerplant went into operation on the Kola Peninsula, bringing the total capacity of Soviet nuclear powerplants to 2,400 MW. In 1974, nuclear capacity should double, with the addition of a second 440-MW unit at the Kola plant and the planned start-up of two

USSR: Imports and Exports

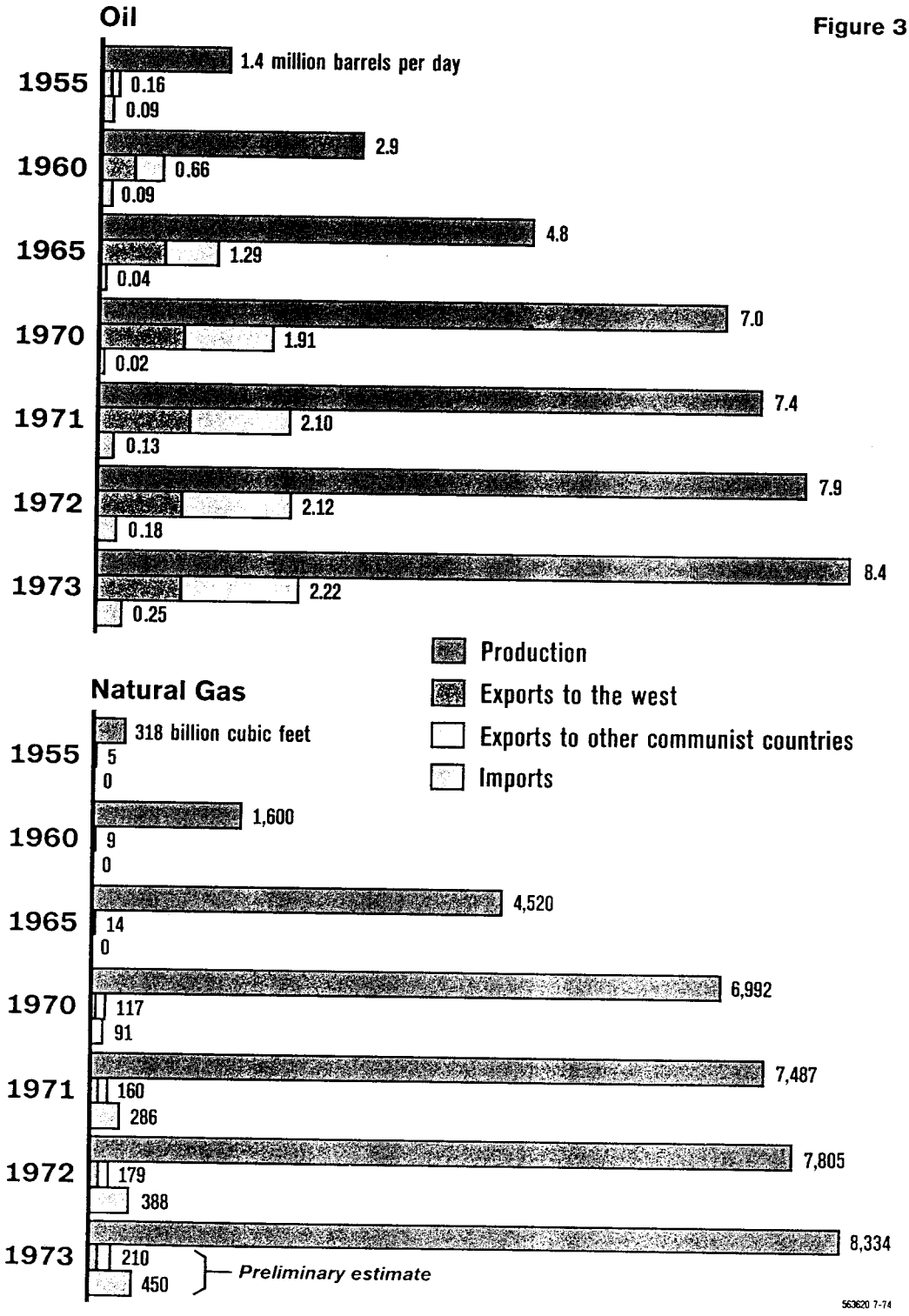

Figure 3

1,000-MW units at the Leningrad nuclear powerplant. The Soviet plan for nuclear electric generating capacity in 1980 is 30,000 MW, at which time 8% of the electricity produced in the USSR is expected to be of nuclear origin.

Other Industries

Except for some fuels and electric power, most branches of industry grew faster in 1973 than in 1972. In fact, most did better than they have so far in the current 5-year plan. But machinery and forest products were the only sectors to equal or exceed the average rate of growth in 1966-70 (see Table 6).

Table 6

USSR: Growth in Selected Industries

Percent

	Average Annual 1966–70	1971	1972	Preliminary 1973
Ferrous metals	5.5	3.9	3.6	4.0
Nonferrous metals	8.3	5.1	4.9	7.0
Forest products	3.5	3.7	3.3	4.3
Paper and paperboard products	7.2	5.5	4.5	6.0
Construction materials	6.2	5.7	4.6	5.7
Chemicals	9.0	8.1	6.9	8.1
Machinery	9.1	11.5	10.5	10.0
Soft goods	8.0	4.5	0.6	3.4
Processed foods	4.7	3.0	3.5	3.1

As for the machinery sector, the output of instruments, agricultural machinery, and some consumer durables—notably passenger cars and vacuum cleaners—increased substantially.[5] Passenger car output increased 26% in 1973, mainly as a result of the continuing expansion of output at the Fiat-built Tol'yatti plant. The growth rates of producer and consumer durables were about the same in 1973, as follows:

Percent

	Average Annual 1966–70	1971	1972	Preliminary 1973
Producer durables[1]	7.9	11.3	10.6	10.0
Consumer durables	15.0	12.4	10.1	10.1

[1] Producer durables include all machinery except classes of machinery intended solely for military/space use. Thus, passenger cars and trucks delivered to the armed forces are counted in the sample of producer durables, but combat vehicles are not.

The producer durables sector was hindered by shortfalls in the manufacture of equipment for the chemical, metallurgical, and petroleum industries.

Computers continued to be one of the fastest growing branches of machine building. Despite its problems in manufacturing high-quality advanced electronic components in sufficient quantities, the USSR is now firmly committed to the new RYAD family of third-generation computers. Although prototypes of most

[5] Nonetheless, goals for higher horsepower tractors and new models of grain combines were not reached. New tractors produced in 1973 had an average of 71 horsepower (compared with the original plan of 85) because of delays in initiating large-scale production of new 80- to 165-horsepower models in the country's largest tractor plant.

of the RYAD computer models have been built, only a few of the smaller models in the series have been produced. The RYAD computers are copies of the IBM series 360, first introduced in the United States in 1964. Unlike the early models of the IBM 360, however, the RYADs do not have high quality and reliability and are poorly equipped with peripheral equipment. As a result, the USSR is actively seeking Western (mainly US) manufacturing technology.

The chemical industry posted particularly large gains in the output of man-made fibers, plastics, and fertilizers, mainly because of a large carryover of new capacity installed late in 1972. Important basic chemicals such as sulfuric acid and caustic soda did not do as well. Delays in commissioning new capacity and the inability of Soviet machine builders to keep up with the demands of the chemical industry continued to hold back chemical production. Orders for Western chemical equipment climbed to an all-time record in 1973 and were concentrated in such high-priority areas as fertilizers and synthetic materials. The facilities ordered, which are large and incorporate very modern Western technology, should contribute substantially to output after 1975. The ammonia plants ordered from the West during 1969-71, for example, incorporated Kellogg technology, which is far more advanced than the technology now used in the USSR.[6] By the time they are completed, these plants and others now being negotiated will provide additional capacity of about 8.7 million tons of ammonia per year. Operating through the 1980s, these plants would save the USSR between 2 billion and 3 billion rubles, compared with the cost of building and operating ammonia plants like those they already have.[7]

Persistence of Industrial Growth Problems

Despite the upturn in 1973, industry still lags far behind the expectations of Soviet leaders in terms of the variety and technical sophistication of its products. Ferrous metallurgy is a case in point. The ferrous metals branch has made progress in recent years in improving the overall quality of output—such as the production of lighter and small rolled products—but the quality and variety of steel products is still inadequate. Thus, the USSR has been increasing purchases of steel from Western suppliers to help meet growing requirements for speciality and high-quality grades.

To help boost productivity, the leadership has decided to buy Western technology on a much larger scale. The effectiveness of this program will be determined in part by Soviet success in overcoming a number of impediments to the efficient use of foreign technology. For example, Soviet workers are unfamiliar with complex foreign machinery, spare parts for foreign equipment are often in short supply, and Soviet maintenance programs frequently are inadequate. Similarly, the technology acquired outside the trade channel through direct and indirect contacts must be translated into blueprints and brought to series production.

CAPITAL INVESTMENT

While enjoying success in agriculture, the Politburo also had reason for satisfaction in the results of another campaign—the one undertaken in the construction sector. The growth of investment slowed in 1973 because of the decision

[6] Kellogg is the world's most experienced firm in engineering and erecting large single-train ammonia plants that use centrifugal compressors and minimize unit energy requirements.

[7] Such a saving is roughly equivalent to total recent annual investment in the chemical and petrochemical industries.

taken at the meeting of the Supreme Soviet in December 1972 to concentrate on projects nearing completion, especially those involving the expansion and modernization of already existing assets. This policy succeeded in holding the growth of unfinished construction to less than 3% after average increases of nearly 12% per year in 1966-72 (see Table 7). Meanwhile, gross additions of new fixed capital, representing new projects going on stream, increased by 8% in 1973—short of the planned goal but well above the bleak 3.4% increase achieved in 1972.

Table 7

USSR: Growth in Capital Investment

Percent

	Average Annual 1966–70	1971	1972	Preliminary 1973
Total new fixed investment	7.6	7.2	7.1	3.5
Gross additions of new fixed capital	8.3	6.3	3.4	8.0
Backlog of unfinished construction	12.1	10.3	12.6	2.8

Restrictions on new construction starts also curbed the proliferation of "noncentralized" investment—local projects funded from enterprise and ministerial profits and by bank credits. Noncentralized investment, a concept developed in the 1965 economic reforms, was intended to be used primarily for re-equipping enterprises, introducing modern technology, and other measures to improve production potential at minimum cost. In practice, these funds often have been used to divert material and manpower resources into projects at variance with the objectives of the planning authorities.

CONSUMER WELFARE

By 1973 the declared consumer goals of the 1971-75 plan seemed to have slipped out of reach. A sharp increase in per capita consumption in 1973 largely reflected a rebound in the growth of food consumption from near stagnation in 1972 (see Table 8). The other major components of consumption—soft goods, durables, and services—pushed ahead in 1973 at rates substantially below those of 1966-70.

The slowdown in consumption growth rates reflects in part the transition from a seller's to a buyer's market. Until recently, levels of living were so low that consumers would purchase practically anything produced. For their part, planners stressed quantity and largely ignored quality and assortment. Now the demand for many basic consumer items has been satisfied, and growing

Table 8

USSR: Growth in Per Capita Consumption

Percent

	Average Annual 1966–70	1971	1972	Preliminary 1973
Total	4.9	3.5	1.5	3.3
Food	3.9	3.2	0.1	3.6
Soft goods	6.6	3.3	1.3	2.3
Durables	8.4	4.2	6.0	5.3
Personal services	6.7	5.8	6.1	3.9

emphasis is being placed on catering to consumer demand for improved quality and variety. But Soviet planners are having problems breaking longstanding production bottlenecks. For example, the 1973 production of leather shoes and knitwear—items in high demand—was far short of the goals the planners had set in 1970.

Although sales of furniture, vacuum cleaners, and refrigerators are keeping pace with production of these items, lags in sales of several other important durables, particularly television sets and washing machines, has resulted in some buildup of excess inventories. The increasingly choosy Soviet public is refusing to purchase durable goods of outmoded design and poor quality, as it did with soft goods during the early 1960s. At that time, the leadership acted to reduce inventories of soft goods by selectively reducing prices and transferring inventories from the cities to rural areas, where extra spending money was becoming available for the first time. Today, changes in the distribution pattern probably would have little effect on consumption. While some price reductions may be in the offing, the leadership is stressing improved product quality and variety. In this connection, the Soviets are looking increasingly to the Western countries for modern equipment and technology to produce consumer goods.

In response to lower rates of growth in consumption, some features of Brezhnev's extensive "welfare package" (announced at the 24th Party Congress in 1971) have been delayed in an apparent effort to keep incomes in line with available goods and services. For example, the increase in the minimum wage from 60 to 70 rubles a month, which had been scheduled for 1971, still has not been fully implemented.

Those areas in which unsatisfied consumer demand is the greatest—housing and the supply of quality food—have been among the slowest to improve. The fulfillment of goals for increases in the supply of quality foods during 1971-75 would permit a substantial decline in the share of daily calories obtained from the starchy staples—potatoes and grain. Meat consumption, for example, is slated to rise by 20% and that of dairy products by 12%. Even if the goal for meat production is met, however, supply will fall short of demand (at prevailing prices). In 1970 and 1972 there were frequent reports of a complete absence of meat in state stores in many provincial cities. Per capita consumption of meat in the USSR is only about half the level of that in West Germany and approximately 60% of that in Czechoslovakia.

Although the housing situation has gradually improved, the fulfillment of the new five-year plan goal would still leave per capita housing space about 10% short of the minimum standards set for health and decency by Soviet officials and far short of the conditions enjoyed by other Europeans.[8] Soviet housing plans, moreover, usually have been underfulfilled.

FOREIGN TRADE

Trade with the developed West increased by about 60% following a 25% increase in 1972, largely because of record imports of grain, valued at about $700 million in 1972 and $1.5 billion in 1973. The United States emerged as the USSR's second largest trading partner outside of Eastern Europe. US-Soviet trade turnover amounted to $1.6 billion, including about $1.2 billion in Soviet imports from the United States.

[8] In the late 1960s, for example, West Germans enjoyed about twice as much housing space per capita as the citizens of the USSR.

Soviet trade with Eastern Europe grew about 20% in both 1972 and 1973. Both years brought large Soviet deficits after many years of nearly balanced trade. Soviet exports went from $7.2 billion in 1971 to $10 billion in 1973 and imports rose from $7.3 billion to $10.9 billion. Eastern Europe maintained the same share of Soviet trade in 1972 as it had since the mid-1960s—55%—but in 1973 its share declined to 49%. The deficits resulted primarily from large increases in Soviet purchases of machinery and equipment and consumer goods from Eastern Europe and a continued reduction in Soviet sales of grain to these countries. Soviet-Chinese trade grew relatively slowly, by 7% in 1973 to $272 million; it was exactly balanced in exports and imports.

Overall, Soviet imports from the West increased more than exports, so that hard-currency deficits in 1972 and 1973 set records of $1.4 billion and about $1.7 billion, respectively (see Figure 4). The USSR financed these deficits by selling gold worth roughly $300 million in 1972 and as much as $1 billion in 1973. A variety of Western medium-term and long-term credits—including $500 million in three-year Commodity Credit Corporation credits from the United States drawn down during 1972-73—covered the balance. As a result, the USSR's hard-currency indebtedness grew to about $3.6 billion. Debt service payments of about $700 million represented 14% of its hard currency exports in 1973, compared with 16% in 1972.

The USSR ordered a record volume of Western machinery and equipment in 1973, in addition to its massive purchases of agricultural products. Soviet machinery orders from the West totaled $2.6 billion in 1973—a 53% rise over 1972 (see Table 9). Equipment for the chemical industry—a chronically weak area of Soviet machine building—accounted for 70% of the increase in orders in 1973. Orders for metallurgical and consumer goods equipment also rose steeply. Much of the automotive equipment (second in total value) will be installed in the giant Kama Truck Plant. Since most equipment orders are connected with major plans for capital expansion, deliveries will stretch out over several years.

Increases in the world prices of several commodity exports, particularly oil, provided the Soviets with a substantial windfall gain in hard currency earnings. For example, the average price of Soviet oil delivered to the United States in 1973 was $6.95 per barrel, compared with $2.70 per barrel in 1972.

Table 9

USSR: Machinery and Equipment Orders from Western Countries, by Type

Million US $

	1972	1973
Total	1,695	2,600
Chemical	250	885
Motor vehicle manufacturing	360	500
Metallurgy and metalworking	55	300
Petroleum refining and pipeline	270	250
Consumer goods manufacturing	30	200
Timber and wood processing	120	130
Ships and marine	115	100
Electronics	50	50
Textiles	45	35
Food processing	15	30
Mining and construction	115	5
Other	270	115

USSR: Hard Currency Merchandise Trade

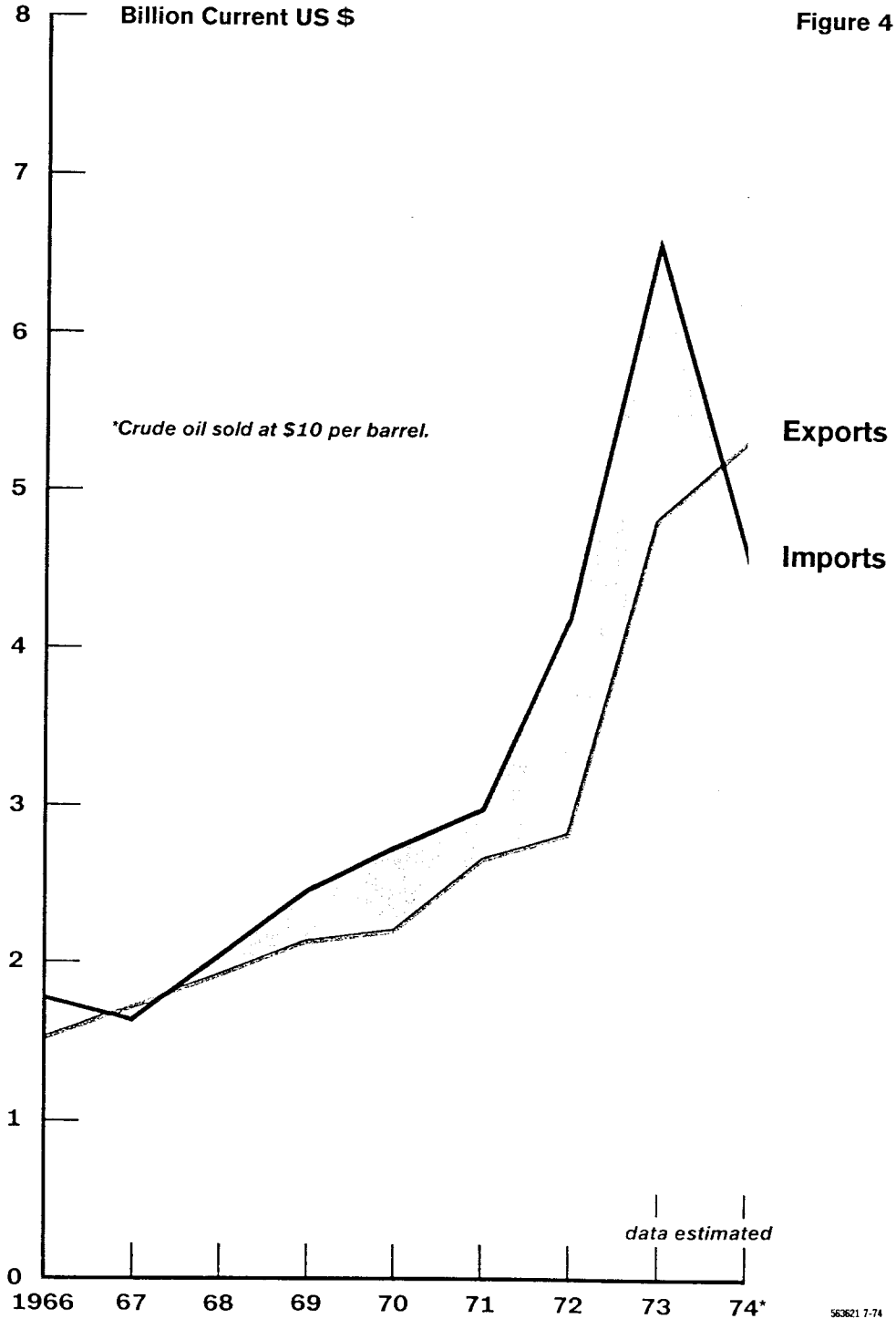

Figure 4

PLANS AND PROSPECTS

As in 1973, the USSR's economic plan for 1974 scales down the targets originally set forth in the Ninth Five-Year Plan without disclosing any changes in priorities. The goals for major sectors imply a growth of 5.9% in GNP (see Table 10) and:

- Substantial growth in industry and agriculture.
- Continued large allocations of capital and materials to agriculture.
- Renewed emphasis on consumer welfare.
- A focus on completing construction projects already begun.

Farm output in 1974 is slated to increase by 7.3%.[9] This is clearly an ambitious goal because the bumper harvests recorded last year will be difficult to match, let alone to surpass. In fact the plan calls for a gross grain harvest of 205.6 million tons in 1974, well below the 222.5 million tons achieved in 1973. The continued high priority attached to support for agriculture is reflected in the scheduled rise in deliveries to agriculture of fertilizer (12%) and machinery (11.5%). Investment in agriculture is to increase 8.1% and constitute almost 27% of total investment in all sectors of the economy. Nearly 20% of the investment in agriculture will finance land reclamation programs designed to add 1.8 million hectares of irrigated and drained land in 1974.

Table 10

USSR: Growth of GNP by Sector of Origin

Percent

	Preliminary 1973	1974 Plan [1]
GNP	7.5	5.9
Industry	6.2	6.8
Construction	2.2	3.4
Agriculture	16.8	7.3
Transportation and communications	7.3	5.4
Domestic trade	5.4	6.3
Services	3.7	3.7

[1] Based on Soviet plans for individual sectors.

In contrast to the Khrushchev era, the present leadership's concern for agriculture seems not to have waned after an exceptionally good harvest. Indeed, Brezhnev recently announced plans to spend 35 billion rubles during 1976-80 on the first phase of a 15-year project to improve 50 million hectares of agricultural land in the northern European area (non-black-soil zone) of the Russian republic, including 32 million hectares of crop land and 18 million hectares of grazing land. The crop land, equal to about 15% of present sown acreage, is about the size of the "new lands" area of Kazakhstan and Western Siberia that was developed during the 1950s. The new program is aimed at damping the large fluctuations in farm output—particularly grain—which have plagued Soviet agriculture.

[9] Output unadjusted for purchases from non-agricultural sectors.

The 6.8% increase scheduled for industry in 1974 is within reach, although continued shortfalls in energy production are expected.[10] Production of color television sets, refrigerators "with two compartments," and automatic washers is slated to rise considerably. The hefty 31% increase in output of cars planned for 1974 probably will be achieved because the Tol'yatti automobile plant will be operating, for the first time, at or near capacity levels for a full 12 months. Nearly one out of every two cars produced in the USSR in 1974 will come from this facility. Production of the Soviet "Moskvich," which represents nearly one-third of all passenger cars in production, is also likely to make large gains in the newly renovated and expanded Moscow and Izhevsk plants.

If plans for industry and agriculture are met, per capita real income in 1974 will grow by 5% and per capita consumption by about 4%, both somewhat more than the average rates for the first 3 years of the current 5-year plan. Per capita food consumption, which increased 3.6% in 1973, is scheduled to grow by 3½% in 1974. Despite the slower growth, larger quantities of quality foods, particularly meat and vegetable oil, will be available. A total of 113.4 million square meters of housing planned for construction in 1974 is about 5% more than the average constructed during 1971-73.

The capital investment program in 1974 will attempt to repeat or better last year's performance in concentrating investment resources on projects nearing completion. In fact, 70% of all centralized investment will be directed to this end. Funds will be allocated primarily to agriculture and key industrial branches. Gross additions of new fixed capital are scheduled to increase 9.3% over the 1973 level, with major new capacity planned for industries producing fuels and power, ferrous metals, and mineral fertilizers.

On balance, the economy should continue on its present tack in 1974, and probably through 1975, with growth averaging about 5%-6% for the two years. In the longer term, the USSR will be hard pressed to sustain a rate of growth as high as 5% per year. Most of the problems which contributed to the slowdown in 1971-72 will remain.

IMPLICATIONS FOR RELATIONS WITH THE WEST

The USSR will almost certainly want to trade more with the United States, especially for high-technology products, but can find most of what it wants in Western Europe and Japan. The USSR and Japan initialed an agreement earlier this year that could pave the way for one of the biggest economic deals between the two countries since the end of the Second World War (see Figure 5).[11] The Japanese will provide a credit of $450 million to help finance a coal mining project in Yakutsk in eastern Siberia. The Japanese will be repaid by deliveries of coking coal beginning in 1979.

The USSR has also stressed increasing its economic relations with West Germany. There have been recent discussions on the possible West German construction of nuclear powerplants in the USSR. An agreement has been signed for joint development of a $1 billion iron ore and steel plant in Kursk. France has actively supported Soviet development. Since 1972, French firms have signed a $150 million contract for the development of a Siberian cellulose plant and a $100 million contract for the design and equipping of five petrochemical plants. In addition, there has been some discussion of French participation in the construction of a $1 billion aluminum complex.

[10] Output unadjusted for purchases from other sectors.

[11] Details of recent economic agreements with the West are shown in Appendix B.

Japanese Interested In Siberian Resources

Figure 5

Soviet hard currency earnings should rise rapidly in 1974-75 because of higher prices for oil and raw material exports. If prices remain near $10 per barrel, oil exports alone may earn about $3 billion in 1974 and approximately $3.4 billion in 1975. Higher prices for chemicals, wood products, and coal—together with larger deliveries of natural gas—could increase total Soviet exports to almost $5½ billion in 1974 (double the 1972 level). Gold sales are an additional large source of potential foreign exchange earnings. If the USSR markets all of its current gold production in Western countries, it would earn (at a price of $150 an ounce) about $1 billion in 1974 and 1975.

With expenditures for Western grain in 1974 expected to be half or less of 1973 outlays, these potential hard currency earnings could easily support a large rise in Soviet imports of Western plants, equipment, and other goods. The USSR could achieve a payments surplus of over $1 billion in 1974. In addition the Soviets could sell $1 billion in gold out of current production. This would permit the USSR to pay cash for more of its machinery purchases and to reduce some of its short-term debt.

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APPENDIX A

STATISTICAL TABLES

Table A1

USSR: Selected Economic Indicators

	1955	1960	1965	1970	1971	1972	1973
Gross national product (billion 1972 US $)	249.1	329.1	436.0	575.3	599.1	614.0	661.4 [1]
Population, mid-year (million persons)	196.2	214.3	230.9	242.8	245.1	247.5	249.8
Per capita gross national product (1972 US $)	1,270	1,540	1,890	2,370	2,440	2,480	2,650 [1]
Industrial production index (1960 = 100)	67.1	100.0	138.5	189.4	200.7	211.2	223.7 [1]
Net agricultural production index (1960 = 100)	81.6	100.0	118.9	147.1	147.6	137.1	157.5 [1]
Bread grains (million metric tons)[2]	63.7	59.7	62.7	90.5	91.1	76.5	92.0
Feed grains (million metric tons)[2]	39.9	33.3	37.3	59.4	56.9	58.0	78.0
Potatoes (million metric tons)	71.8	84.4	88.7	96.8	92.7	78.3	107.7
Meat[3] (million metric tons)	5.8	8.7	10.0	12.3	13.3	13.6	13.5
Total labor force (including the armed forces) (million persons)	105.2	110.6	117.9	124.2	126.0	128.2	130.2
Non-agricultural (million persons)	55.3	64.0	75.5	86.7	89.2	92.2	95.1
Agricultural (million persons)	49.9	46.6	42.3	37.5	36.8	36.0	35.1
Total investment index (1960 = 100)[4]	54.5	100.0	135.6	195.3	209.4	224.4	232.3
Per capita consumption index (1960 = 100)	82.9	100.0	113.1	143.4	148.8	150.6	155.7
Crude oil (million b/d)	1.4	2.9	4.8	7.0	7.4	7.9	8.4
Natural gas (billion cubic feet)	318	1,600	4,520	6,992	7,487	7,805	8,334
Electric power (billion kilowatt-hours)	170	292	507	741	800	857	915
Coal (million metric tons)	390	510	578	624	641	655	668
Primary energy production (million metric tons of coal equivalent)	435	663	942	1,214	1,277	1,340	1,394
Crude steel (million metric tons)	45.3	65.3	91.0	115.9	120.7	125.6	131.0
Cement (million metric tons)	22.5	45.5	72.4	95.2	100.3	104.3	109.5
Copper, refined (thousand metric tons)	377	475	700	1,015	1,090	1,145	1,200
Chromite (million metric tons)	0.3	0.5	1.2	1.4	1.4	1.5	1.5
Manganese ore (million metric tons)	4.7	5.9	7.6	6.8	7.3	7.8	8.0
Iron ore (million metric tons)	71.9	105.9	153.4	195.5	203.0	208.1	216.0
Phosphate rock[5] (million metric tons)	N.A.	5.8	11.5	18.0	19.9	21.1	22.6
Automobiles (thousand units)	107.8	138.8	201.2	344.2	529.0	730.1	916.7
Trucks, including buses (thousand units)	337.5	384.8	415.1	571.9	613.7	648.7	685.4
Electric generators (thousand kilowatts)	4,526	7,915	14,390	10,578	12,600	13,700	16,500
Machine tools, metalcutting (thousand units)	117.1	155.9	186.1	202.2	207.2	211.3	213.0
Instruments (million rubles, 1967 prices)	258	760	1,277	2,364	2,610	2,956	3,349
Computers, digital (million rubles, 1967 prices)	10	55	169	710	905	1,213	1,593
Refrigerators (thousand units)	151	529	1,675	4,140	4,557	5,030	5,423
Washing machines (thousand units)	87	895	3,430	5,243	4,052	3,001	2,986
Radios (thousand units)	3,549	4,165	5,160	7,815	8,794	8,842	8,615
Television sets (thousand units)	495	1,726	3,655	6,682	5,817	5,980	6,271
Vacuum cleaners (thousand units)	131	501	800	1,509	1,718	2,168	2,659
Sewing machine (thousand units)	1,611	3,096	800	1,400	1,408	1,439	1,400
Gold production (thousand troy ounces)	2,970	3,500	5,000	6,600	7,100	8,200	8,500
Imports (million US $)	3,061	5,628	8,058	11,732	12,480	16,097	20,980
Exports (million US $)	3,427	5,564	8,175	12,800	13,806	15,409	21,332

[1] Preliminary.

[2] From 1960, official production is discounted for excess moisture, extraneous materials, and post-harvest losses.

[3] Including horsemeat, rabbit, poultry, game, edible offal, and lard.

[4] New fixed investment.

[5] Estimated.

Table A2

US-USSR: Indicators of the Level of Farm Technology [1]

Indicator	United States	USSR	USSR as a Percent of United States
Share of labor force employed in agriculture (percent)[2]	5	27	540
Output per farm worker[2]	8,944	962[3]	11
Number of persons supported by one farm worker[2]	48	7	15
Sown acreage per tractor (acres)	64	258	403
Grain acreage harvested per combine (acres)	52	473	910
Trucks per 1,000 farm workers	665	34	5
Fertilizer nutrients applied to crops[4] (pounds per acre)	93	45	48
Nitrogen (N) (pounds per acre)	44	22	50
Phosphorous (P_2O_3) (pounds per acre)	26	11	42
Potash (K_2O) (pounds per acre)	23	12	52
Livestock yields			
Average live weight at slaughter:			
Cattle (pounds)	953	681[5]	71
Hogs (pounds)	240	236[5]	98
Eggs per hen per year	218	166[5]	76
Milk per cow milked per year (pounds)	9,388	4,652[5]	50
Crop yields			
Spring wheat[6] (bushels per acre)	28	14	50
Winter wheat[6] (bushels per acre)	33	26	79
Rye[6] (bushels per acre)	26	16	62
Oats[6] (bushels per acre)	52	34	65
Corn[6] (bushels per acre)	69	35	51
Barley[6] (bushels per acre)	44	26	59
Potatoes (bushels per acre)	382	173	45
Sugar beets (metric tons per acre)	16	9	56
Ginned cotton (pounds per acre)	442	784	177

[1] Based on 1970 data, except as noted.

[2] Based on 1973 data.

[3] Calculated from US output using the geometric mean of comparisons of USSR and US output carried out, alternatively, in dollar and ruble prices.

[4] Based on 1971 data.

[5] Average for state procured animals.

[6] Three-year average (1969–71).

APPENDIX B

SOVIET COOPERATIVE VENTURES WITH THE WEST

The details of a number of major projects in which the USSR is exchanging raw materials for Western technology and equipment are presented below. Several projects have been already signed, such as the natural gas deals with Western Europe. Other and much larger ventures are being negotiated now. Direct purchases (equipment for the Kama Truck Plant, for example) are not included in the listing.

Second Far East Timber Agreement (KS-II Project)

The USSR and K.S. Sangyo Company are in the final stages of concluding a second development agreement for far east Siberian timber reserves. Negotiations on the follow-up project have been in progress for more than a year, but final agreement has been stalled by differences over pricing.

As currently envisioned, the USSR will purchase, under long-term credits at 6⅜%, $450 million in timber cutting and hauling equipment and timber carrying ships. The Soviet purchase of $50 million in Japanese consumer goods will also be financed by 5-year credits at 7¼%.

In return, the USSR will deliver 590 million cubic feet of sawn logs and pulpwood to Japan during 1974-78, with prices likely to be tied to world market levels. At current Soviet export prices, these deliveries will earn the USSR more than $1 billion. Deliveries under the project would constitute an estimated 20% of all Japanese timber imports from the USSR during the period of the contract.

Kursk Steel Mill

Soviet and West German firms on 22 March reached preliminary agreement for the development of an iron and steel complex near Kursk. The first stage of the project will take place from 1974 to 1978 and will include a pelletizing plant with a capacity of approximately 4 million tons per year, an electrical steel plant producing 2 million tons per year of bar stock, and rolling mills producing 1.5 million tons of rolled steel. Discussions for the second construction stage, 1978-80, will begin in 1976.

Negotiations, in progress for more than a year, had been blocked over the question of financing. The Soviets had demanded a firm commitment for over $1 billion in long-term credits at 6.5% to 7%. When informed earlier this year that West Germany would not provide subsidized credits, the Soviets stated that they would pay cash for the nearly $1 billion in Western imports required for the first stage of the project. By paying cash, the USSR will save several hundred million dollars in interest charges and will avoid paying a high interest rate at a time when it continues to seek concessionary rates from its other Western trading partners. The Soviets did state, however, that the second stage of construction will be financed on a barter basis, with Soviet repayments probably based on output from the first stage of the project.

Soviet-Montedison Chemical Plant Contract

In 1973 the USSR signed an agreement with the Italian firm Montedison whereby the latter is to provide seven large chemical plants to the USSR during 1974-78. The deal is valued at at least $500 million and will be financed under an earlier agreement that made available to the USSR a $550 million line of credit. The USSR will repay the credit with products manufactured in the plants supplied by Montedison—ammonia (500,000 tons per year for 10 years), urea, and titanium dioxide.

USSR-Occidental Fertilizer Agreement

In April 1973 the USSR and Occidental Petroleum Corporation signed a 20-year agreement under which Occidental would supply phosphoric acid in exchange for Soviet ammonia, urea, and potash—an exchange that was to start in 1978 and expected to total $3.5 billion to $4 billion each way. Occidental was also to arrange for supply of equipment and technology for 10 fertilizer plants—8 to produce ammonia and 2 for urea—and for supporting infrastructure (pipelines from Odessa to Tol'yatti and storage, loading, and port facilities). The fertilizer equipment and technology together with the pipeline and related facilities were originally valued at $400 million-$500 million and were to be repaid with fertilizer. An Export-Import Bank loan of $180 million has recently been approved, and a private US banking consortium has been formed to provide a matching amount. The recent approval of the Eximbank loan should lead to US contracts for the infrastructure and possibly for technology and equipment for 4 of the 8 ammonia plants that came under the Occidental agreement. Occidental Petroleum apparently will be responsible for the support facilities.

North Star LNG Project

A consortium of three US companies—Tenneco Inc., Texas Eastern Transmission Corporation, and Brown and Root—has been considering a cooperative venture with the USSR to import 2 billion cubic feet per day of liquefied natural gas (LNG) over a 25-year period for the US east coast market. All of the gas would come from the large Urengoy deposit in the permafrost areas of North Tyumen Oblast in West Siberia.

The USSR would drill about 160 gas wells in the Urengoy field. The US consortium would participate in construction of gathering lines, a 48-inch-diameter gas pipeline to an export terminal in the Murmansk area (about 1,500 miles), a large liquefaction plant, and related terminal and port facilities. Initial deliveries of gas were to start around 1980.

The original proposal envisaged dollar costs of about $6.5 billion (in 1980 dollars), of which $3.7 billion would go for Soviet-based installations. (Additional ruble costs for construction of these latter facilities were expected to be equivalent to about $1 billion.) The proposal specified an f.o.b. price of $0.60 per 1,000 cubic feet of gas and a landed price of $1.25 per 1,000 feet in Philadelphia.

Negotiations are continuing. Several major differences over prices and financing must be ironed out before the project can go forward. Despite a wide gap between what the Soviets want and what the US consortium thinks is reasonable, both sides apparently continue to have hopes of an eventual agreement.

Yakutsk LNG Project

In mid-1973, Occidental Petroleum Corporation, El Paso Natural Gas Corporation, and Japanese interests concluded agreements of intent with the USSR to exploit natural gas deposits located in the Yakutsk ASSR in eastern Siberia. Yakutsk gas would be piped about 2,700 miles to Nakhodka where an LNG plant and export facilities would be constructed. Japan and the United States would each receive 1 billion cubic feet of LNG per day via tanker over a 20-year period beginning in about 1980. From the same project, the USSR also expects to obtain about 1 billion cubic feet of gas per day for consumption in the Far East.

The cost of the gathering system, pipeline, LNG plant, and export facilities to be built by US and Japanese firms in the USSR has been estimated at about $3 billion (in 1980 dollars). Locally incurred ruble costs have been estimated to be roughly equivalent. All LNG tankers would be owned by US and Japanese interests.

The USSR requested supplementary credits of $150 million to cover additional equipment needed for seismic work and exploratory drilling to find and evaluate gas reserves in the Yakutsk area. At present the USSR claims only about 11 trillion cubic feet of explored reserves. US and Japanese technicians agree that several years of exploration will be needed to establish the reserves that would be required to support the project.

An April 1974 umbrella agreement provided $1.05 billion of Japanese credit at 6.375% interest for three Siberian development projects (gas, coal, and timber) including $100 million for Yakutsk natural gas exploration. A memorandum was also signed on 26 April 1974 between the USSR and the private Japanese firms involved in the deal.

Sakhalin Continental Shelf

The USSR and Japan have discussed the exploration and development of Sakhalin off-shore continental shelf oil reserves for several years. More recently, the Soviets have also invited US firms to discuss the possible exploration of these reserves. Several of these firms are interested. Gulf has been most active, having for some time considered a joint exploration venture with Japan.

Soviet sources estimate the potential off-shore reserves at 30 billion-45 billion barrels of low-sulfur oil in a 38,600-square-mile area out to water depths of 660 feet. In water depths up to 330 feet, there may be some 20 billion barrels—an amount equal to the reserves claimed for Alaska's Prudhoe Bay field and 40% of current estimates of North Sea reserves. Investment for exploration and development of one or two major oil fields off-shore could amount to $1 billion because work will be complicated by severe tides and massive ice flows.

Discussions had long been stalled by differences over production sharing, the provision of risk capital, and rates of return. A Soviet-Japanese letter of intent which outlined basic forms of the proposed project was signed in 1973, but no additional progress was made until earlier this year.

Under the terms of the April 1974 protocol, Japan will provide the USSR $100 million to cover exploration costs over a 5-year period. Soviet repayment of the risk capital is tied to the successful development of reserves, with no repayment required if exploration proves unsuccessful. In return for bearing this risk, the Japanese firms will hold an option to purchase 50% of all oil recovered during the repayment period and for 10 years thereafter.

The Japanese have already arranged for all the risk capital needed. US technology and know-how are crucial to the project, however, and some form of US assistance probably will have to be arranged before a final agreement is signed.

Siberian Coal for Japan

On 30 April 1974 the USSR and Japanese firms signed a preliminary agreement for development of a coking coal deposit near Chulman in the Yakutsk ASSR. During 1979-98 the USSR will supply Japan with 104 million tons of coking coal, valued roughly at $8 billion (at projected market prices). Some $390 million in Soviet purchases of Japanese equipment to be used in developing the reserves will be financed by long-term credits at 6.375%. In addition, the Soviets will receive shorter term credits at higher interest rates to purchase $60 million worth of Japanese consumer goods.

If Japan is willing to provide the necessary investment funds, the USSR could provide much larger quantities of coking coal. The Yakutsk coal basin contains at least 500 million tons of explored reserves of coking coal and billions of tons of coal suitable for metallurgical use.

Tyumen Crude Oil Pipeline Project

This project originally called for construction of a 48-inch-diameter 4,200-mile-long pipeline from the Tyumen oil fields in West Siberia to Nakhodka in the Far East. This line was to carry 500,000 to 800,000 barrels per day for export to Japan, and possibly to the United States, over a 20-year period. The cost of the project was estimated at $3 billion. The Soviets requested Japanese credits of at least $1 billion to purchase the pipe and equipment needed to build the 2,600-mile section between Irkutsk and Nakhodka. Some US companies expressed interest in participating in the project.

Japanese interest was based on the assumption that Japan would receive 800,000 barrels per day. However, in September 1973, Soviet officials told the Japanese that a maximum of 500,000 barrels per day would be available for export. No reduction in foreign investment in pipeline construction was suggested. Japanese (and US) interest in the project therefore waned.

In April 1974, Soviet government leaders proposed that the Japanese help finance a second trans-Siberian rail line instead of a pipeline to transport Tyumen oil to the Far East. The proposed line would pass north of Lake Baikal to Komosomolsk, whence the oil could be moved to Nakhodka via pipeline. Under this new proposal the Soviets would supply Japan with 500,000 barrels per day of crude oil annually for 20 years following the line's completion. In return, the USSR wants Japan to supply up to $3 billion in loans for construction, railroad, and pipeline equipment. Although the proposed rail line would provide access to important deposits of coal, copper, and iron ore, as well as to Tyumen oil, the Japanese are reluctant to accept the proposal. They object to the extra time and cost of construction. Whereas the pipeline would be wholly dedicated to oil transport, the rail line would have many alternative uses for Moscow.

USSR Natural Gas Agreements with Western Europe

To date the USSR has concluded six separate agreements with West European nations for the delivery of natural gas, and by the end of the decade—when full-scale deliveries for all projects are in effect—will be committed to deliver a total of 1.8 billion cubic feet of natural gas daily. Various West Euro-

pean nations have advanced roughly $1.5 billion in long-term loans to finance Soviet purchases of large-diameter pipe and equipment for natural gas production and transmission. The total value of Soviet deliveries, which depends in part on future world price levels, could well exceed $10 billion.

In 1968 the USSR and Austria concluded an agreement whereby the Soviets will provide Austria with natural gas during 1969-90. By 1971, deliveries had already reached their maximum level of 147 million cubic feet per day. As part of the agreement Austria provided the Soviets—under long-term credits—with more than $100 million in large-diameter steel pipe. Austria has recently sought additional deliveries from the USSR but has met with stiff Soviet resistance over prices and quantities.

A similar but much larger pact was concluded between the USSR and Italy in 1969. The Soviets agreed to provide a maximum of 580 million cubic feet per day over a 20-year period. Deliveries actually began earlier this year following the completion of a natural gas pipeline transiting Austria and are scheduled to reach maximum levels within a few years. Under the agreement, the Italians provided the Soviets with $200 million in long-term credits at favorable rates to finance Soviet purchases of large-diameter pipe and related equipment.

The USSR has concluded two natural gas agreements with West German firms—the first in 1970 and a second in 1972. Each of the two agreements provides for deliveries over a 20-year period, with combined daily deliveries peaking at 675 million cubic feet by the late 1970s. West German banks have advanced a total of $900 million in long-term credits to finance Soviet imports of 2.4 million tons of large-diameter pipe and assorted pipeline equipment.

In 1970, Finland concluded a deal for the construction of a Soviet-Finnish natural gas pipeline and the subsequent purchase of Soviet natural gas over a 20-year period beginning in 1974. Finland will receive a maximum of 135 million cubic feet per day by the late 1970s. As part of the agreement, Finland will provide the USSR with $36 million in large-diameter pipe.

The French were the last to conclude a natural gas agreement with the Soviets; a 1972 contract calls for deliveries over 20 years beginning in 1976. By the end of the decade, daily deliveries will reach 240 million cubic feet, including the gas actually destined for Italy under a swap agreement concluded between the Italians and the French. In return, the Soviets were granted roughly $270 million in long-term government-backed credits to finance purchases of pipe and equipment related to the production and transmission of natural gas.

Soviet Aluminum Industry

The USSR is currently discussing the construction of alumina, aluminum, and aluminum rolling mill plants with Western firms. The US Kaiser Corporation signed a science and technology agreement with the Soviet State Committee for Science and Technology last January and appears to be in the bidding for the construction of some of the contemplated plants. France's Pechiney Ugine Kuhlmann is also discussing construction of aluminum production facilities with the Soviets, although the Western firms apparently are not in competition with one another.

Soviet imports from the West in support of planned expansion could run well over $1 billion. The Soviets probably will insist on counter-purchase agreements covering part of the aluminum and aluminum products produced from these plants to pay for the expansion and to ensure a continuing source of hard currency earnings.